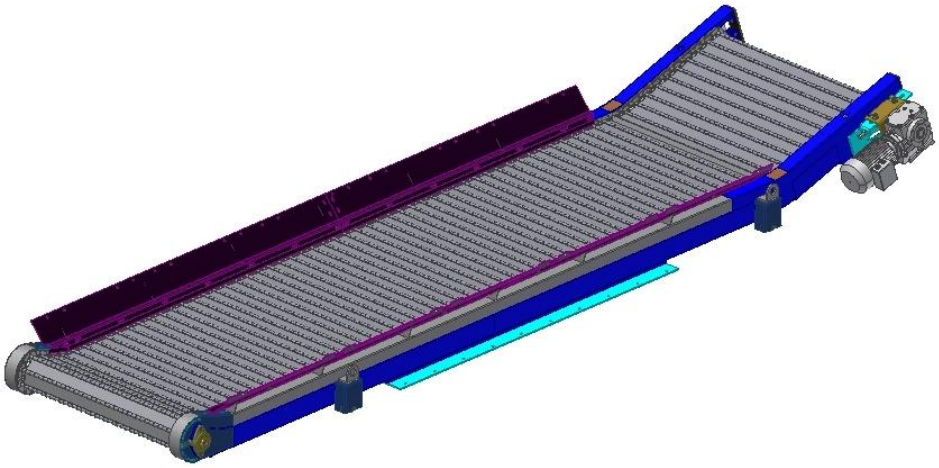
TRUMPF L3030/L3050 CONVEYOR PARTS AND SERVICE MANUAL



Thank you for choosing an LNS Chip Conveyor. We are proud to have you among our LNS family of users.

LNS Chip Conveyors simply and reliably remove waste from machining operations. Machine efficiency is increased and operator safety is improved since the conveyors work with little operator attention and without interrupting production time. LNS Conveyors are available for many types of machine tools or other applications. They can be arranged to deliver wet or dry waste to containers or to conveyor or chute-type disposal systems. For further information, contact:

Inside Sales Department
LNS TURBO
203 Turbo Drive
Kings Mountains, NC 28086

This Service Manual is intended to assist with the normal maintenance that will assure long service life of your LNS Chip Conveyor. It is in two parts – a Service Instruction Section, followed by a Parts Section, which includes drawings and parts lists for the basic elements of the conveyors.

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INSTRUCTIONS FOR ORDERING PARTS

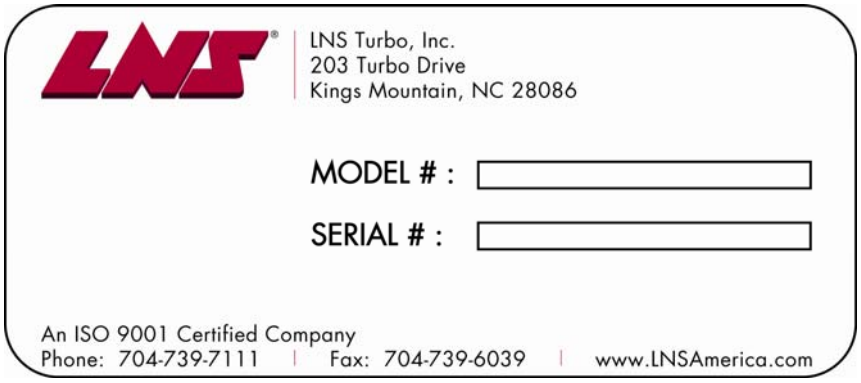
FURNISH THE FOLLOWING INFORMATION ON YOUR ORDER:

- MODEL AND SERIAL NO. OF MACHINE
- CATALOG NUMBER AND NAME OF PART
- QUANTITY REQUIRED
- PURCHASE ORDER NUMBER
- BILL TO ADDRESS

FURNISH EXACT SHIPPING INSTRUCTIONS:

- COMPLETE SHIPPING ADDRESS
- MODE OF DELIVERY
- PARCEL POST, TRUCK LINE, ETC

HOW TO FIND THE MODEL AND SERIAL NUMBER OF YOUR MACHINE:
The machine model number and serial number is stamped on the machine nameplate located on the motor cover.



DIRECT YOUR ORDER TO:

LNS Turbo
203 Turbo Drive
Kings Mountains, NC 28086 U.S.A.
Telephone: (704) 739-7111 Fax: (704) 739-6039

WARRANTY

LNS conveyors carry a warranty against defective material or workmanship during manufacture of the conveyor for one year in service or eighteen months from shipment, which ever occurs first. LNS will repair or replace, at its option, free of charge except freight, FOB shipping point, any parts it finds nonconforming on these conditions:

a. on request, user promptly allows LNS to inspect, and user returns all requested parts to LNS' plant, and
b. user has operated and maintained products in accordance with LNS' maintenance and operational literature and good business practice has been used; and
c. products have not been misused, abused, damaged by accident or altered without LNS' written consent; and
d. user employs trained maintenance and operating personnel; and
e. buyer meets all payment obligations;

Parts, which have expected life shorter than one year under normal usage, are excluded.

USED PRODUCTS ARE SOLD AS IS UNLESS OTHERWISE AGREED UPON AT THE TIME OF PURCHASE. SELLER MAKES NO WARRANTY FOR USED PRODUCTS EXCEPT AS TO TITLE. BUYER MAY INSPECT AND TEST BEFORE SHIPMENT AND ACCEPTS USED PRODUCTS ON THESE TERMS.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER WRITTEN, ORAL, OR IMPLIED, (INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE.)

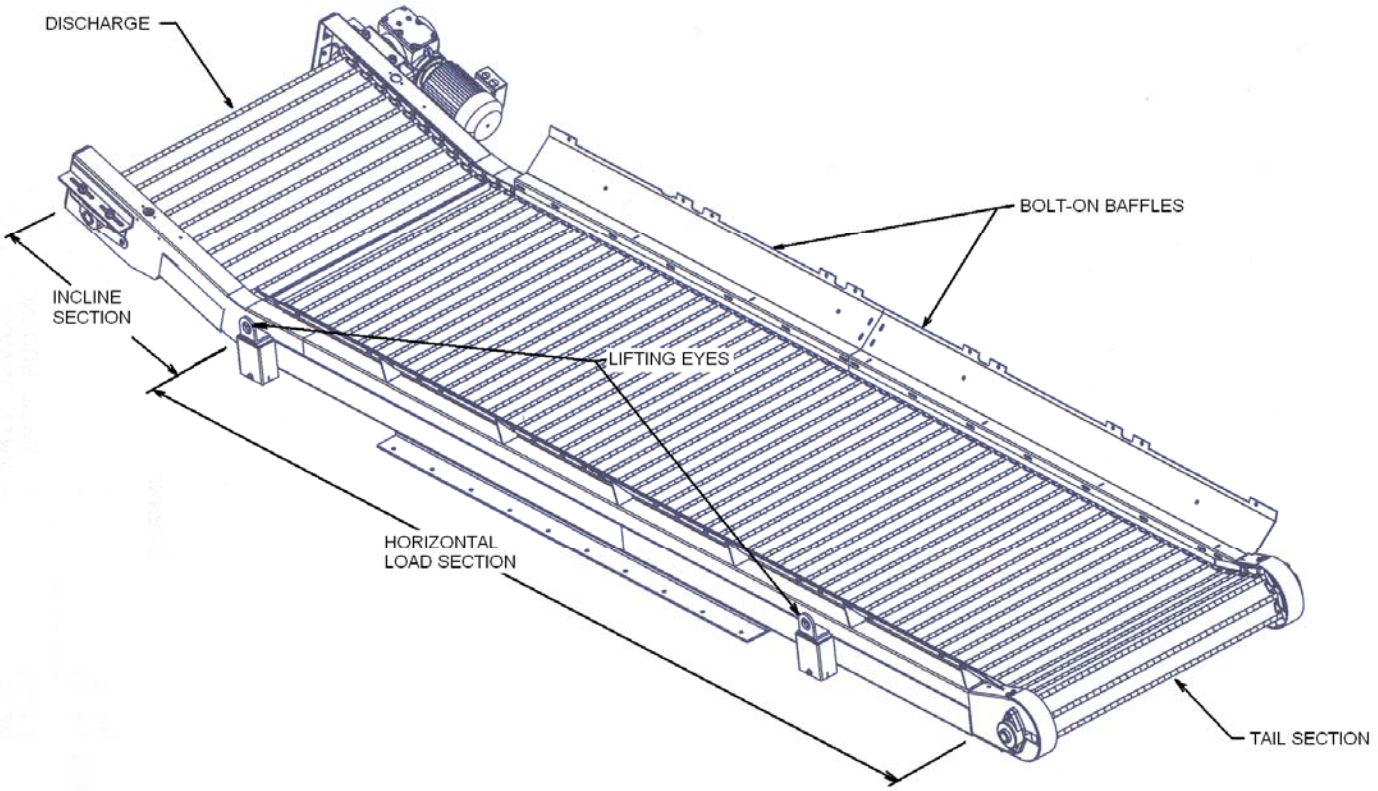
LNS CONVEYOR
GENERAL INSTALLATION INSTRUCTIONS

Each LNS chip conveyor is carefully engineered to fit a specific make and model of machine tool; or special application. Given the characteristics of a particular machine configuration, LNS conveyors are designed to provide the best possible interface with the machine. It must be recognized that there is almost no inter-changeability: a LNS Chip Conveyor will fit only the make and model (s) of machine for which it was designed.

Upon receipt of your LNS Chip Conveyor, unpack and inspect for damage. The conveyor left the factory in good condition. If there is any damage, a claim should be filed with the freight carrier. Also compare the contents of the shipment to the packing list to verify that everything shipped was received.

For most applications, installation of a LNS Chip Conveyor is a simple slide-in or drop-in process requiring no modification to either the conveyor or the machine. In some cases, bolted sheet metal panels may have to be removed, added, or replaced. Such removal, addition, or replacement is part of a normal installation, which can be accomplished using common hand tools.

Some LNS Chip conveyor installations include loose, bolt-on baffles that are shipped attached to the conveyor. These may have to be removed prior to installation.



CONVEYOR NOMENCLATURE

For most machines, conveyor must be slid in tail end first through an opening either in the rear or side of the machine tool

Before attempting to slide the conveyor into the machine, measure the vertical and horizontal clearance inside the machine to be sure both dimensions are larger than the conveyor load section. Remove any obstructions. It may also be necessary to remove some type of chip pan, basket, or tray that was furnished with the machine in lieu of a chip conveyor

CAUTION: A chip conveyor is normally top heavy and easily tipped over. Be sure to use proper lifting and rigging procedures to prevent accidental tipping

Using a lifting device such as a hoist or forklift, raise the conveyor until the tail of the conveyor is high enough to clear the lower edge of the conveyor outlet opening in the end (or rear) of the machine, with the load section level. Carefully slide the conveyor into the machine.

When in the correct installed position, the conveyor baffles will extend up, under and be overlapped by the machine baffles; so that all chips are directed onto the conveyor in a “waterfall” effect with none falling into the machine enclosure or outside of the conveyor baffles.

Once the conveyor is in the proper position, secure any machine support brackets if provided. Insure the conveyor is level and not in a bind. If the conveyor is not level from side to side, premature wear can occur causing failure of the belt or frame.

Any bolt-on conveyor baffling that was not attached prior to conveyor installation should be installed at this time. Also at this time install any additional or replacement sheet metal machine parts supplied with the chip conveyor.

ELECTRICAL CONNECTION

LNS Chip Conveyors are supplied with variety of drive packages and electrical controls, depending on conveyor application and customer preference. Only a qualified electrician or machine service technician should perform connecting the chip conveyor to an electrical power supply.

Before making any electrical connections be certain the voltage for which the conveyor drive and control are wired is the same as that being delivered by the electric power supply. It may be necessary in the case of 220/440V, 3 phase, for example, to change the motor field shunts from one voltage to another.

Some machines are equipped with internal electrical controls and a multi-pin type accessory plug for connecting the chip conveyor. LNS Chip Conveyors can be ordered with a mating plug, so that connecting the conveyor is as simple as plugging it in.

The best source of power for the chip conveyor is the machine electrical cabinet. It is the customer’s responsibility at the time of order to determine what, if any, electrical components are present and orders the appropriate conveyor control.

Even if the machine has no plug or other provision for connecting a chip conveyor, the conveyor can be ordered from LNS with both halves of a quick disconnect style plug. One half will come pre-wired to the conveyor cable. Mount the other half of the plug to the machine electrical cabinet and connect it to the power supply. The chip conveyor can then be quickly unplugged for cleaning or service without having to disconnect “hard wired” connections.

Before starting the chip conveyor, check to be sure no tools, packing, or other material have been left on the belt or in the discharge opening. Start the conveyor and verify proper direction of belt travel. Reverse polarity if the belt is moving in the wrong direction.

INSTALLATION AND STARTUP

Your LNS Conveyor has been run prior to shipment to insure proper operation. However, it is recommended that the following checks be made before startup:

Conveyor Drive
Check the frame and belt for damage during shipment or storage.
Locate the conveyor in the proper operating position.
All drive elements (sprockets) should be located close to their bearing supports. Each set of sprockets should be carefully aligned to prevent excessive wear and noise.
Drive chains and belts should be properly tensioned.
Check the speed reducer to see that oil is at the proper level. If there is a shipping plug in the gearbox vent, remove it.

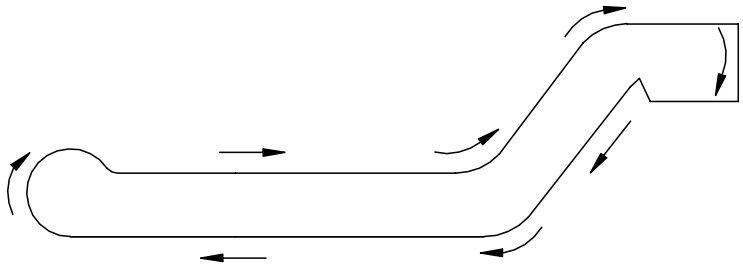
Leveling
Level should be placed across tail section and on bottom cover at discharge, perpendicular to travel of the belt. Adjust conveyor support leg, if so equipped, or shim as necessary to level.

Electrical Controls
If the conveyor is supplied with electrical controls, check the voltage of the electrical supply voltage to insure it matches the voltage specified on the control. Read the Electrical Controls section in this manual for more details before installing the conveyor.

A qualified electrician in accordance with all local, state and national safety codes local codes must connect the electrical equipment to the power source. If the conveyor power source is the basic machine tool, refer to the basic machine tool manufacturer's wiring diagram.

DO NOT DRILL HOLES IN THE CONVEYOR FRAME TO MOUNT POWER BOXES OR ACCESSORIES WITHOUT FIRST CONSULTING LNS.

Arrows in the diagram below show the proper **forward** movement of belt on a **hinged belt** conveyor.



CAUTION !

ALWAYS DISCONNECT POWER TO THE CONVEYOR BEFORE ATTEMPTING ANY MAINTENANCE PROCEDURES.

LUBRICATION AND ROUTINE MAINTENANCE

After First 100 Hours of Operation and at regularly scheduled intervals to suit operating conditions:

Inspect conveyor belt parts for excessive wear. If excessive wear is noted, belt should be removed and repaired. (Refer to service section for belt removal instructions).
Change oil in speed reducer (if applicable). Refer to gearbox maintenance for proper gear oil.
Grease pillow block bearings, using grease gun. Do not over grease or the bearing seals could be damaged.
Check belt tension.

CAUTION !

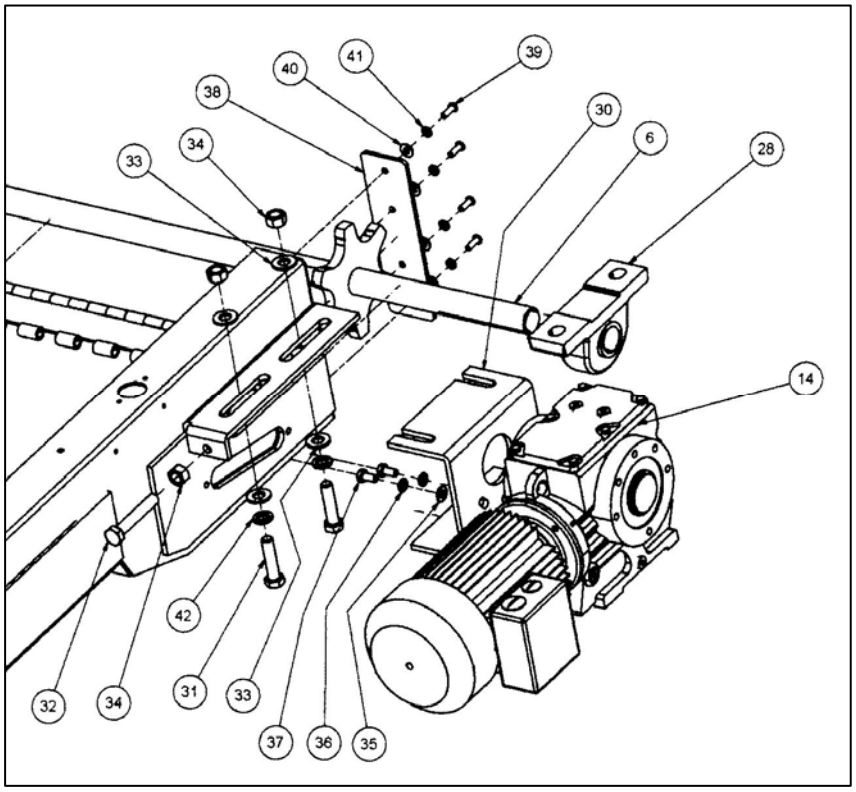
ALWAYS DISCONNECT POWER TO CONVEYOR BEFORE ATTEMPTING ANY MAINTENANCE PROCEDURES.

SERVICE SECTION

Most smaller assemblies of the conveyor, such as the drive shafts and gearmotors, can be disassembled by careful reference to the parts drawings on the pages that follow. However, the belt and related parts can be removed by following the sequence described below. Refer to the Part Section in this manual for belt part designation/catalog number.

HINGE BELT REMOVAL AND INSTALLATION INSTRUCTIONS

1. Disconnect power to the conveyor before performing any work on the belt.
2. Remove the inspection plates located directly under the two pillow block bearings.



3. Run the conveyor until the master link reaches the inspection slot. The master link can be identified since it has a cotter pin in the end of the link pin.
4. Remove the dust cover (shown below) from the end of the gearmotor (item # 14)

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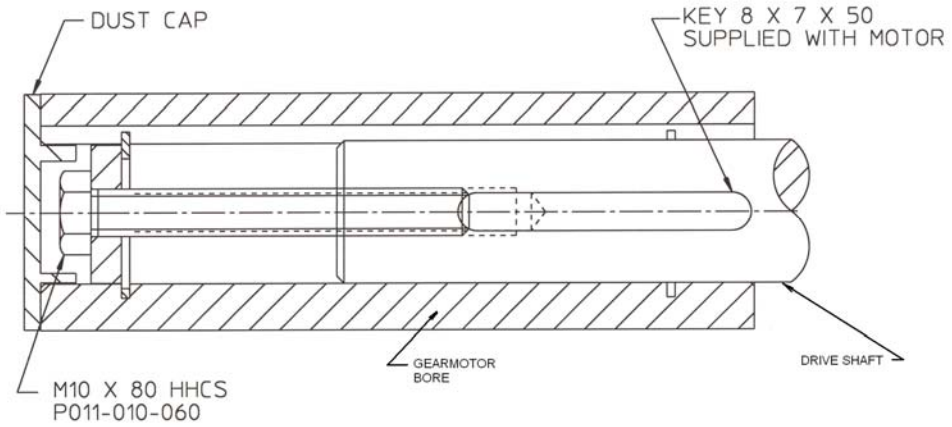
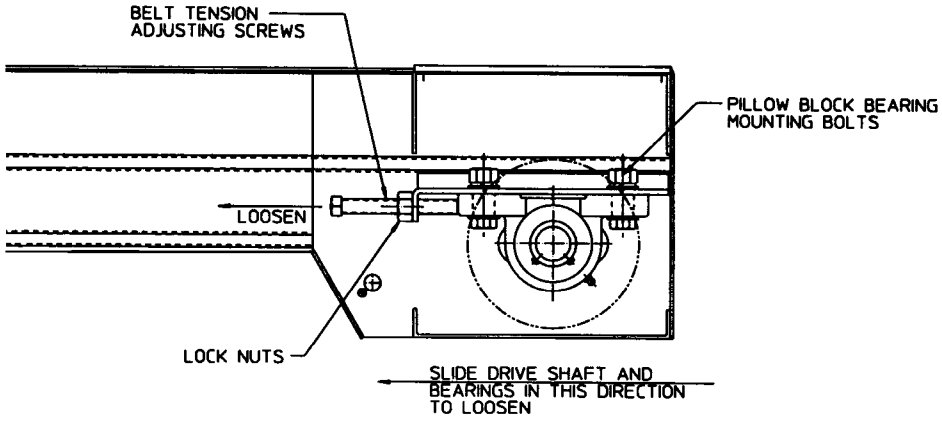
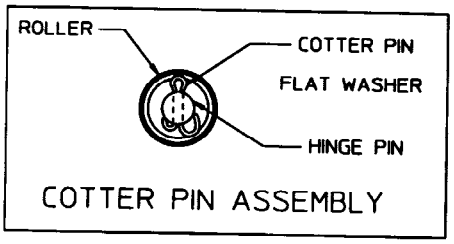
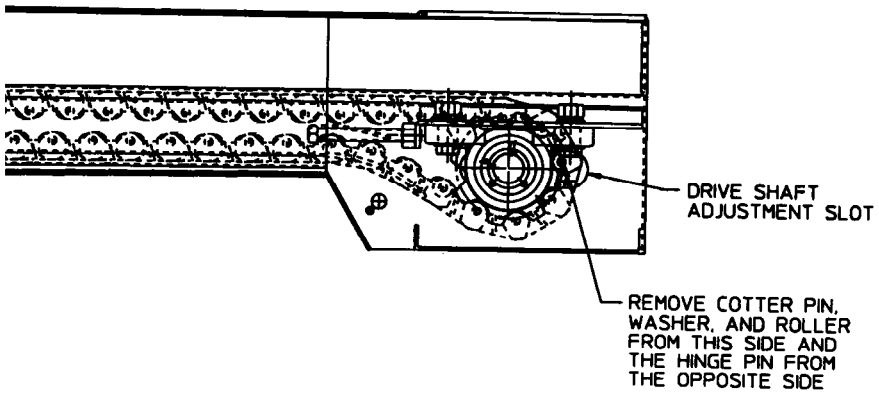


5. Remove the 10-mm. bolt (shown above) from the end of the drive shaft.
6. Remove the 4 mounting bolts (item # 37) attaching the gearmotor (item # 14) to the mounting bracket (item # 30) and remove the gearmotor..
7. Loosen the lock nuts (item # 34) on the belt tension adjusting screws (item #32 located just behind each of the pillow block bearings on the drive shaft) and back off the adjusting screws until they are flush with the face of the adjusting bracket.
8. Loosen the two bolts (item # 31) holding each pillow block bearing.
9. Slide the drive shaft (item # 6) toward the tail of the conveyor as far as the adjusting slots for the pillow block bearings will allow. This will provide maximum slack in the belt.
10. Working through the drive shaft adjustment slot, remove the cotter pin from one of the belt hinge pins on the end of the pin located on the drive motor side of the frame.



11. Being careful to catch the flat washer and roller, pull the hinge pin out through the adjustment slot on the side opposite the motor. The hinge pin cannot be removed from the motor side because it headed on one end of the pin.

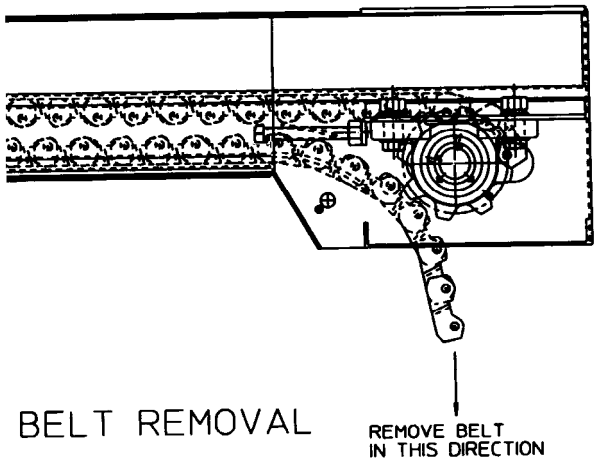




HINGE PIN REMOVAL

BELTREP3

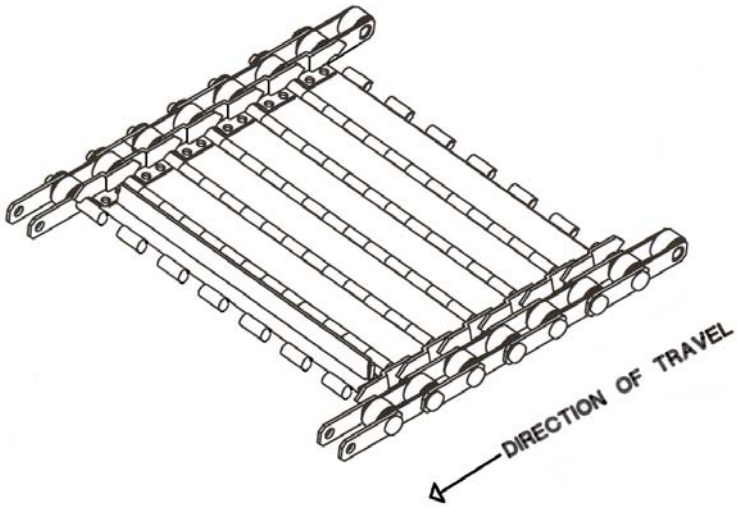
12. Grasp the end of belt below the drive shaft and pull the belt out of the conveyor. Be sure to wear gloves to avoid being cut by sharp edges on the belt. When only a few feet of belt remain in the conveyor, the belt on the floor will have enough weight to begin pulling the remainder out on it's own. As the last of the belt begins to run out faster, don't attempt to stop it; just stand clear and let it run out onto the floor. Note that the belt was moved in the direction opposite normal belt travel.



HINGE BELT REMOVAL

BELTREP4

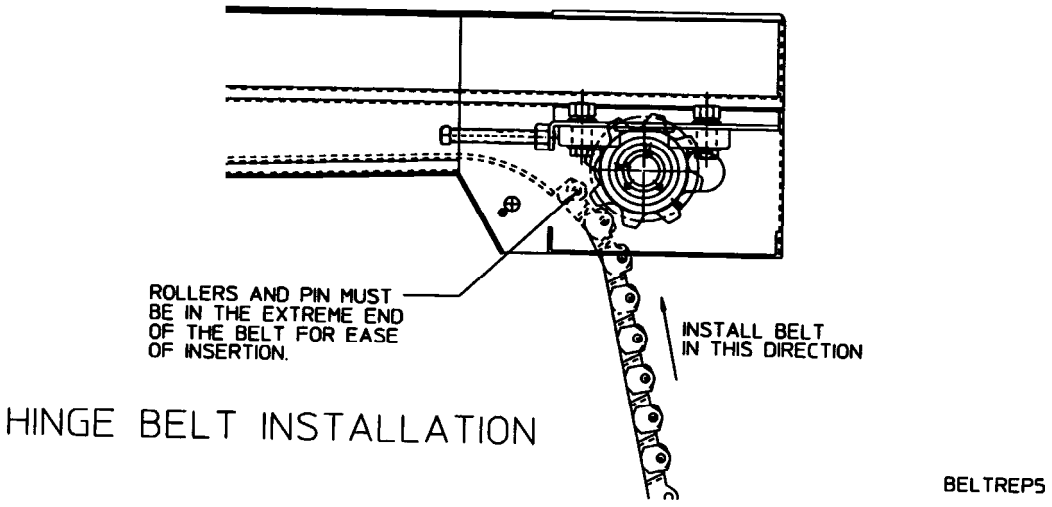
13. Before moving the old belt out of the way, pay particular attention to the way the side wings overlap. When the belt is running in the normal direction of travel, the leading ends of the side wings are outboard, and the trailing ends are inboard.



14. Place the new belt on the floor beneath the conveyor discharge, being careful to orient it in the same direction as the old one that was removed.

15. If there is not already a hinge pin in the end of the belt, use the pin and rollers that were removed to separate the old belt. There must be a pin and rollers in the extreme end of the belt for ease of insertion.

16. With a person standing on either side of the belt, lift up the lead end and start it in the lower track, from which the old belt was pulled out. Be sure and wear gloves to prevent injury, and be sure to maintain a secure hold on the belt until at least five feet have been fed into the conveyor frame. At this point, the weight of the belt inside the frame should be enough to prevent it running back out on it's own.


ROLLERS AND PIN MUST BE IN THE EXTREME END OF THE BELT FOR EASE OF INSERTION.
INSTALL BELT IN THIS DIRECTION
HINGE BELT INSTALLATION
BELTREP5

17. Continue feeding the belt into the conveyor frame. One person may have to use a length of 2 x 4 or a pry bar to "help" it along from time to time. Force should not be required. Many times the belt can be pushed in all the way around from the discharge end. If the belt hangs up, look for some obstruction; don't force it.
18. Once the belt reaches the tail sprockets, the belt will need to be engaged in the teeth around the bottom and the top of the tail sprockets. Once belt is wrapped around the tail sprockets, with one person feeding the belt at the discharge and the other pulling the upper flight of the belt toward the discharge until the lead end of the belt reaches the drive shaft, carefully feed it up over the drive sprockets.
19. Remove the hinge pin and rollers that were used to help guide the belt through the track.
20. With the ends of the belt engaged in the teeth around the top and bottom of the drive sprockets, the two ends should join. At this point, it may be necessary to remove one or more hinge plates from the new belt. Most new belts are supplied longer than necessary.
21. Reverse steps 1 through 11.
22. When adjusting the belt tension, clamp a pair of vise grip pliers on one of the formed cleats on the belt. Use the vise grips to "rock" the belt back and forth to feel the slack and drag on the belt. There should not be more than enough slack to allow rocking the drive shaft through 15 degrees of rotation without moving the belt. On a new belt, zero slack is O.K., but if the belt is difficult to move with the vise grips, it's too tight. Correctly adjusted, it should be possible, if difficult, to move the belt with one's gloved hands by turning the drive shaft.

23. Visually confirm the belt is located in the center of the frame. Adjust if necessary by loosening the setscrews in the pillow block bearings and shifting the drive shaft; to the left or right as appropriate.

24. Re-connect power and test run the conveyor. The belt should run freely and the only sound should be a subdued clicking as each hinge plate passes over the drive sprocket.

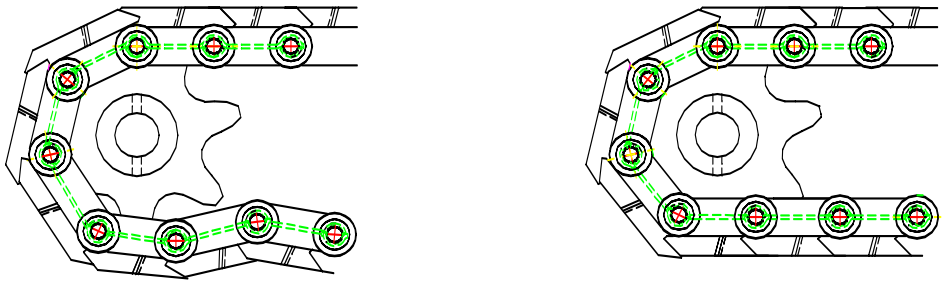
WARNING !
Hinge plates can pinch hands and fingers.

CONVEYOR BELT TENSIONING

Correct conveyor belt tension is essential to ensure proper operation and extended life of conveyor components. The belt has been properly tensioned during factory assembly. As normal wear occurs the belt may become slack and need adjustment.

The following factors may be used to determine if the belt needs adjustment.

- Belt Too Loose: Belt Slack at exit point of the drive sprocket before re-entry into frame. (See fig. 1).
- Belt Too Tight: Belt has intermittent jerks and a popping sound while conveyor is in operation.
- Uneven Tension (side to side): (1) Belt tends to track to one side (2) Excessive wear on outside of side wings.



INCORRECT **CORRECT**

FIG. 1

Once it is determined that retensioning of the belt is necessary, the following procedure should be followed:

INSTRUCTIONS FOR CHECKING CONVEYOR BELT TENSION

1. Position belt with a link pin directly below the conveyor drive shaft.
2. Hold a straightedge across the bottom of the conveyor discharge at the very rear.
3. Using a 6-inch scale, measure vertically from the straightedge up to the underside of the belt.
4. Push up on the underside of the belt and repeat the measurement as in step 3.
5. Under the force applied by the average worker, the measurement in step 4 should be approximately 1/16 inch (1.5mm) greater than the measurement in step 3.

BELT TENSIONING PROCEDURE

1. Install belt as stated in Parts and Service Manual, except do not tension belt. (Preload exaggerates and/or alters torque reading).
2. Tighten pillow block bearing bolts, and then loosen five (5) ¼ turns. (This step ensures that bearing is parallel to bearing mount surface, and that lock washer is not adding additional torque to the reading.)
3. Set torque wrench to 25 inch pounds. Tighten each bearing-adjusting bolt alternately until 25 inch pounds is obtained and torque wrench no longer turns adjusting bolt, but clicks at rotation.
4. Manually rotate belt back and forth. (This distributes tension evenly throughout belt.)
5. Repeat steps (3) and (4) until belt rotation no longer results in decreased torque setting. (This step ensures that both sides of belt are tensioned equally.) Lock adjusting bolts.
6. Run machine for (2) hour break-in period.
7. Loosen adjusting bolt locknuts. Loosen bearing bolts as noted in step (2). Repeat steps (3), (4) and (5). The belt must be retorqued to obtain correct tension after break in period (see guide below).

NOTE: Belts with discharge heights in excess of 50” or load length in excess of 8 ft. may require higher torque settings. Contact LNS if assistance is needed.

TORQUE GUIDE

Overall Length 225” to 375”…….100 in. lbs.

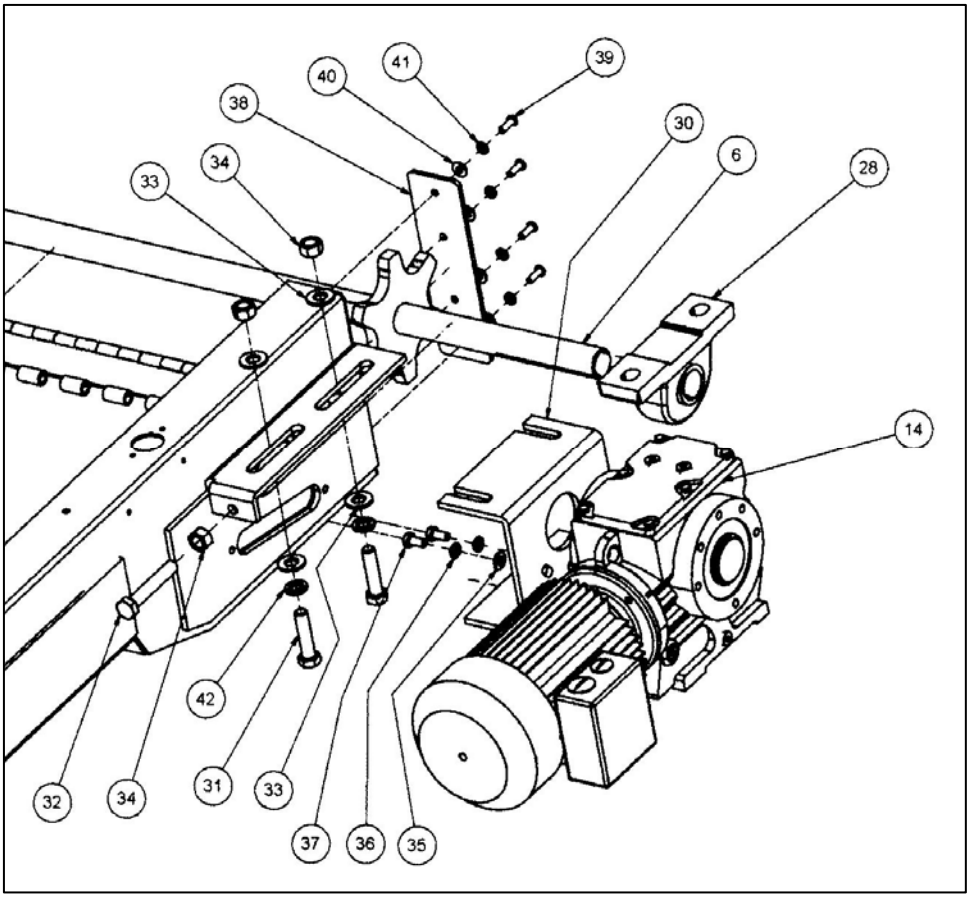
NOTE: Material use, application and incline angle can affect required torque settings.

CAUTION !

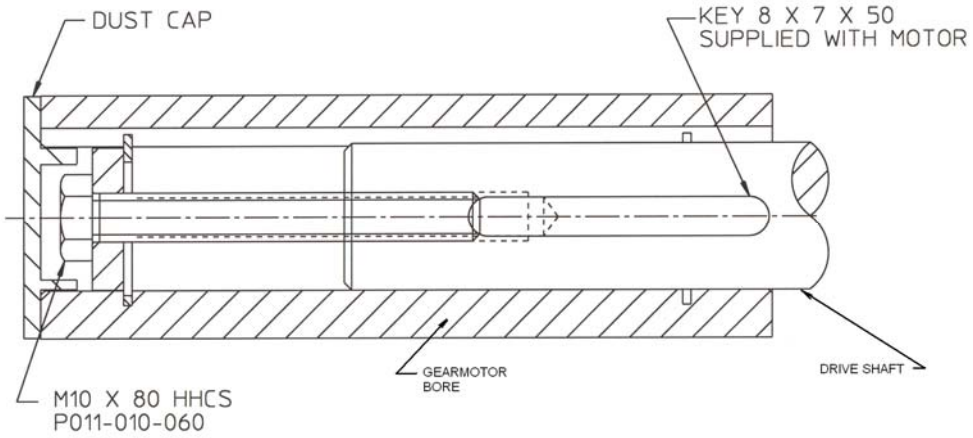
ALWAYS DISCONNECT POWER TO CONVEYOR BEFORE ATTEMPTING ANY MAINTENANCE PROCEDURES.

DRIVE SHAFT/ SPROCKET WELDMENT REMOVAL AND INSTALLATION

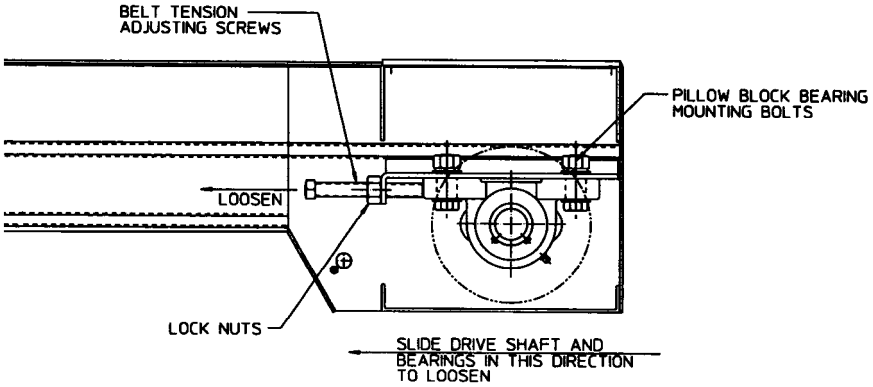
1. Disconnect power to the conveyor before performing any work on the conveyor.
2. Remove the inspection plates located directly under the two pillow block bearings.



3. Run the conveyor until the master link reaches the inspection slot. The master link can be identified since it has a cotter pin in the end of the link pin.
4. Remove the dust cover (shown below) from the end of the gearmotor (item # 14)



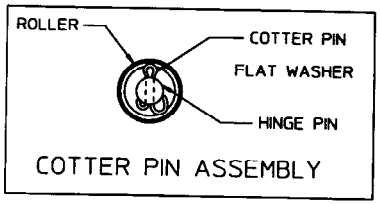
5. Remove the 10-mm. bolt (shown above) from the end of the drive shaft.
6. Remove the 4 mounting bolts (item # 37) attaching the gearmotor (item # 14) to the mounting bracket (item # 30) and remove the gearmotor..
7. Loosen the lock nuts (item # 34) on the belt tension adjusting screws (item #32 located just behind each of the pillow block bearings on the drive shaft) and back off the adjusting screws until they are flush with the face of the adjusting bracket.
8. Loosen the two bolts (item # 31) holding each pillow block bearing.
9. Slide the drive shaft (item # 6) toward the tail of the conveyor as far as the adjusting slots for the pillow block bearings will allow. This will provide maximum slack in the belt.
10. Working through the drive shaft adjustment slot, remove the cotter pin from one of the belt hinge pins on the end of the pin located on the drive motor side of the frame.


BELT TENSION ADJUSTING SCREWS
PILLOW BLOCK BEARING MOUNTING BOLTS
LOOSEN
LOCK NUTS
SLIDE DRIVE SHAFT AND BEARINGS IN THIS DIRECTION TO LOOSEN

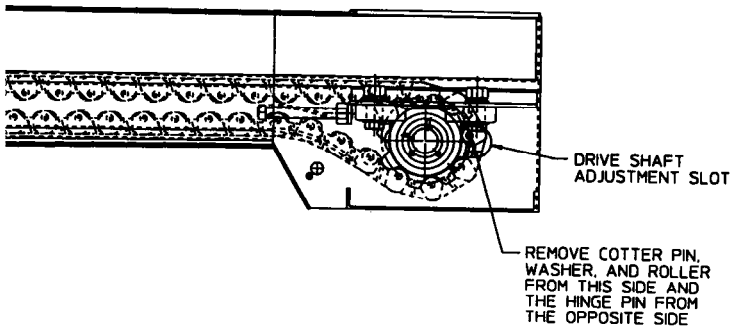
LOOSEN DRIVE SHAFT

BELTREP2

11. Being careful to catch the flat washer and roller, pull the hinge pin out through the adjustment slot on the side opposite the motor. The hinge pin cannot be removed from the motor side because it headed on one end of the pin.



COTTER PIN ASSEMBLY



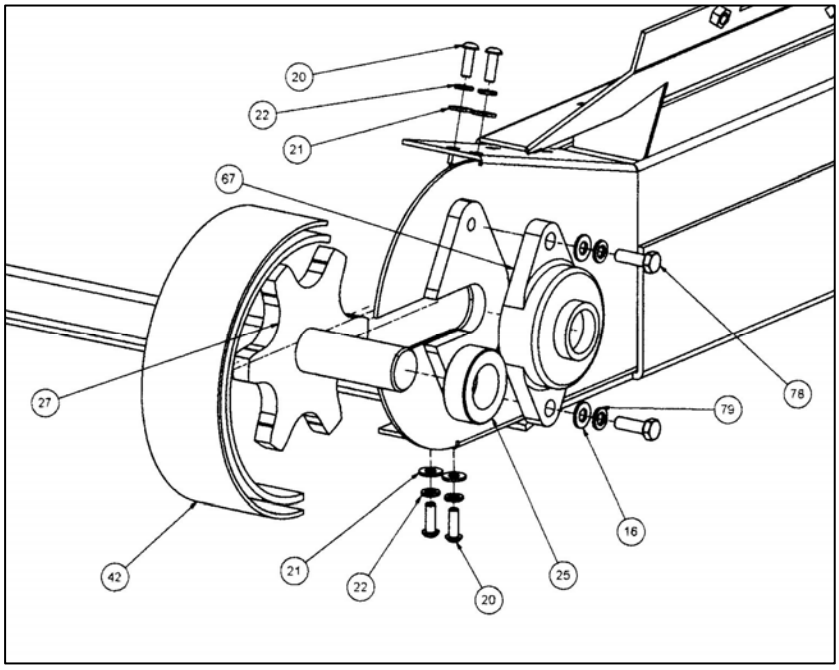
HINGE PIN REMOVAL

BELTREP3

12. Remove the discharge support plates (item # 38) from both sides of the conveyor.
13. Remove the pillow block bearing mounting bolts (item #31) and nuts (item # 34) on both sides of the conveyor.
14. Slide the drive shaft/sprocket weldment (item # 6) out of the conveyor frame.
15. Remove the pillow block bearings from the drive shaft/sprocket weldment and transfer to the replacement.
16. Reverse steps 1 through 15 insuring that the sprockets are centered in the frame during assembly.
17. Visually confirm the belt is located in the center of the frame. Adjust if necessary by loosening the setscrews in the pillow block bearings and shifting the drive shaft; to the left or right as appropriate.
18. Re-connect power and test run the conveyor. The belt should run freely and the only sound should be a subdued clicking as each hinge plate passes over the drive sprocket.

TAIL SHAFT/ SPROCKET WELDMENT REMOVAL AND INSTALLATION

1. Disconnect power to the conveyor before performing any work on the conveyor.
2. Follow procedure to remove the belt from the conveyor as described earlier in this manual.
3. Remove the bolt-on tail flange (item #42) from each side to the conveyor.



4. Remove the bearing mounting bolts (item # 78) from each bearing on both sides.
5. Slide the tail shaft/sprocket weldment (item # 27) from the frame.
6. Transfer bearings and collars to replacement tail shaft/sprocket weldment.
7. Reverse steps 3 – 5 insuring that the tail shaft/sprocket weldment is properly centered in the conveyor frame.
8. Follow the procedure to reinstall the belt back into the conveyor as described earlier in this manual.
9. Visually confirm the belt is located in the center of the frame. Adjust if necessary by loosening the setscrews and locking devices on pillow block bearings and shifting the tail shaft; to the left or right as appropriate.
10. Re-connect power and test run the conveyor. The belt should run freely and the only sound should be a subdued clicking as each hinge plate passes over the drive sprocket.

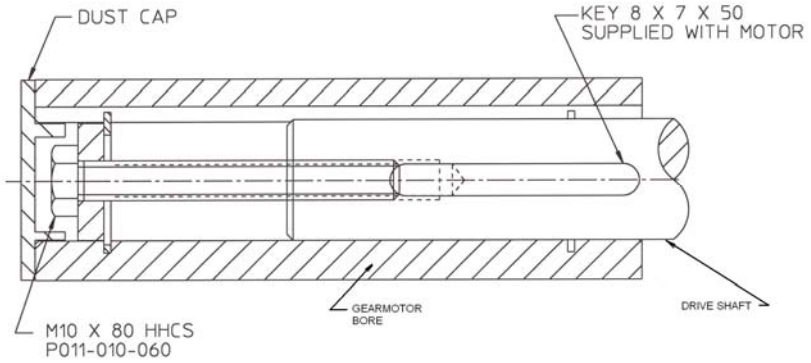
GEARMOTOR MAINTENANCE

These operating instructions are intended to assist you to install, maintain and operate the gearmotor for trouble free service and operation.

When installing or disassembling the gearmotor, do not hammer it on or off the drive shaft. Hammering can cause brineeling of the reducer's bearings, therefore shortening the bearing life. If the gearmotor does not slide onto the shaft freely, check for dents or burrs on the drive shaft or gearmotor bore. If none are found, we recommend heating the gearmotor bore to approximately 175ºF (when possible) and sliding the gearmotor on the shaft. This will reduce possible damage to the reducer's bearings.

GEARMOTOR REMOVAL AND INSTALLATION:

1. Disconnect power to the conveyor before performing any work.
2. Unplug the electrical disconnection plug at the gearmotor terminal box.
3. Remove the dust cover (shown below) from the end of the gearmotor (item # 14).

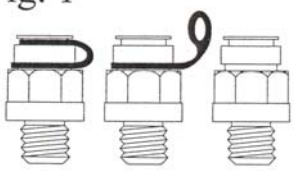


4. Remove the 10-mm. bolt (shown above) from the end of the drive shaft.
5. Remove the 4 mounting bolts (item # 37) attaching the gearmotor (item # 14) to the mounting bracket (item # 30) and slide the gearmotor off of the shaft.
6. Reverse steps 1 – 5.

Note: When installing the gearmotor it is advised to apply a high quality mounting paste to the keyed drive shaft. The mounting paste is to aid in the prevention of rusting and fretting corrosion between the gear reducer hollow shaft and the conveyor drive shaft.

For transportation, the gearmotor is supplied with the breather plug already mounted. <u>After the unit is installed, the black rubber seal located on the breather MUST BE REMOVED (Fig. 1).</u> In addition the oil level should be checked. Remove the plated (non-painted) oil level plug. The oil level is correct when the surface of the oil is level with the lowest point of that tapped hole.

Fig. 1



After installation, the actual mounting plate position should be confirmed against the mounting position shown on the gear reducer nameplate. Adequate lubrication is only guaranteed if the unit is mounted in the specific nameplate mounting position.

WARNING ! Always ensure equipment is secure and electrical power is off before removing or performing maintenance on the drive assembly. Oil levels and oil quality should be checked on regular intervals, determined by usage and the environment. Grease and oil should be changed per the recommendations below.

LUBRICATION SCHEDULE FOR GEARMOTORS

Gear Reducer Type	Lubrication Type	Ambient air temperature Range ºF	ISO Viscosity Grade	Mobil Oil Co.	Chevron Oil Co.	Shell Oil Co.	Texaco Oil Co.	BP Oil Co.	Kluber Oil Co.
SEW Eurodrive SA57	Oil	+32 to +104	VG680	Mobilgear 636	Chevron Non-leaded Gear Compound 680	Shell Omala Oil 680	Meropa 680	BP Energol GP-XP 680	Kluberoil GEM 1-680
		+5 to +77	VG220	Mobilgear 630	Chevron Non-leaded Gear Compound 220	Shell Omala Oil 220	Meropa 220	BP Energol GP-XP	Kluberoil GEM 1-220
Ball & Roller Bearings	**Grease** Used for normal applications. Temp. Range: -22ºF to 130ºF			Mobilux EP2	Cheveron Dura-Lith EP2	Shell Alvania Grease R3	Multifak EP2	BP Energrease LS3	Centoplex 2EP

The approximate lubricant in US **gallons and liters** for the gearmotor mounted in the M1 position is as follows:

GEARMOTOR	M1 MOUNTING POSITON	
	Gallons	**Liters**
SEW Eurodrive SA57	0.13	0.5

Oil changes are required at intervals of 10,000 operating hours or every two years, whichever comes first. In applications where hostile operating conditions exits, such as high humidity, corrosive environment, or large temperature changes, the lubricant should be changed at more frequent intervals.

Grease packed bearings should be cleaned and regreased every 10,000 hours. Input (high speed) bearings should not be over greased. They should be filled with grease not to exceed 1/3 of the bearing's free volume. For output bearings and bearings with replacement grease shields, fill to 2/3 of their free volume.

ATTENION: When the recommended lubricant is not available, it is permissible to use a lubricant having equivalent characteristics but we do not recommend that lubricants of different brands be mixed. Under no circumstances should synthetic lubricants be mixed with one another or with one having mineral base.
Check alignment, belt tension and mounting bolt torque periodically. Keep the drive relatively free of dust and dirt.

TROUBLE SHOOTING

The following chart will show some problems and their probable causes and possible solutions.

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Conveyor stalled	(1) Chip jam	If jam does not clear, run conveyor in reverse no more than 4 to 6 inches. Start conveyor in proper direction to see if jam has cleared. If jam has not cleared, find and remove obstruction.
	(2) Belt tension	Refer to Belt Tension section.
	(3) Tail shaft	Check for loose or missing screws.
	(4) Side wings bent or missing	Repair or replace.
	(5) Cotter pin missing from link pin	Replace cotter pin.
	(6) Sludge and/or chip inside frame	Remove belt and clean.
Belt flutter	Incorrect belt tension	Refer to Belt Tensioning section.
Excessive wear on outside of side wings	(1) Belt misalignment	Look for sideward motion of belt caused by loose drive shaft/sprockets or bearing setscrews or locking device. If necessary separate belt, align sprockets and retighten set screw and locking device.
	(2) Uneven side to side tension	Refer to Tensioning section on.
	(3) Leveling	Check leveling of frame to insure it is not twisted. If necessary, adjust leveling screws located in foot until conveyor has correct leveling.
	(4) Chip jam inside frame	Remove belt and clean frame.
Motor overloads kick out excessively	(1) Singe phasing due to break or loose connection in supply line, blown fuse or tripped overload relay.	Repair supply lines. Replace fuse or reset overload relay..
	(2) Undersized overload relay or fuse.	Match full load amps on motor plate and replace overload relay or fuse.
	(3) Motor not connected to proper supply voltage.	Check connection diagram on conduit cover and correct the wiring.
	(4) Supply voltage varies outside the allowable tolerance causing an undervoltage or overvoltage condition.	Assure correct supply voltage.
	(5) Ambient temperature is too high.	Ensure cool air gets to the motor. Ducting may be required.
	(6) Sludge/Chip build-up inside frame	Remove belt and clean.
	(7) Defective gear reducer and/or motor	Replace as needed.

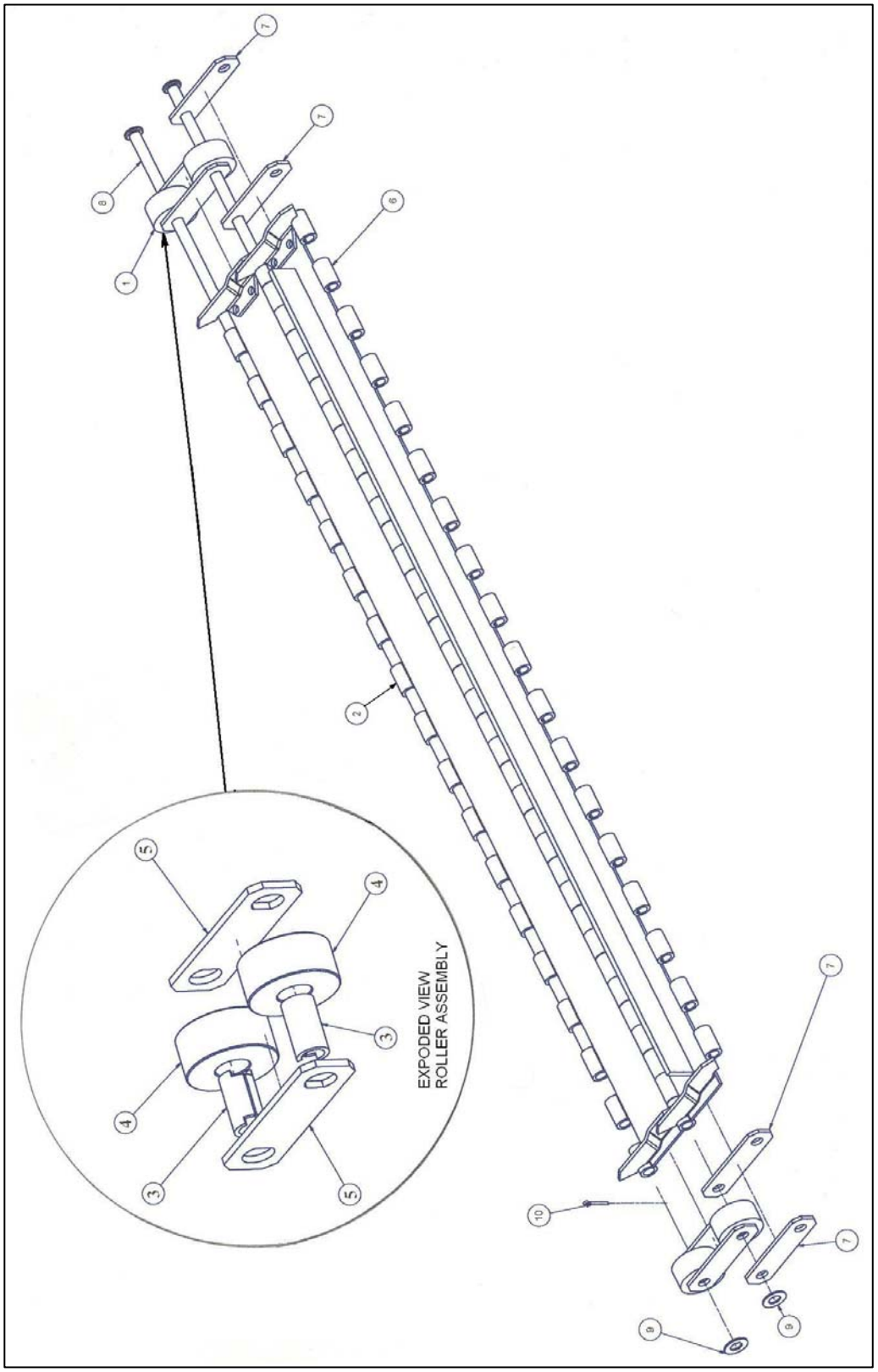
TROUBLE SHOOTING (CONTINUED)

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Motor does not run	(1) Blown fuse.	Determine and correct cause of failure and replace fuse.
	(2) Motor protection device activated.	Determine and correct cause of failure and reset overload relay.
	(3) Motor protection device faulty or will not reset.	Check protection device for defect and replace if necessary.
Motor will not start or starts sluggishly.	(1) Motor not connected to proper voltage.	Check connection diagram in conduit box cover and correct the wiring.
	(2) Large voltage and/or frequency fluctuation at starting.	Ensure stable power supply.
Motor runs in wrong direction.	(1) Motor supply leads misconnected.	Switch two supply leads.
Motor hums and draws high current.	(1) Faulty or defective winding.	Have motor repaired by qualified service shop.
	(2) Rotor dragging.	
Motor over current protection trips immediately.	(1) Short circuit in power supply conductors or in the motor.	Correct the fault condition.
	(2) Motor has ground fault or winding-to-winding short circuit.	Have motor repaired by qualified service shop.
	(3) Motor improperly connected.	Check connection diagram in conduit box cover and correct the wiring.

WARNING !

NEVER ATTEMPT TO CLEAR A JAMMED CONVEYOR WITHOUT FIRST TURNING OFF THE POWER TO THE CONVEYOR. NEVER USE HANDS TO CLEAR A JAM – USE A TOOL.

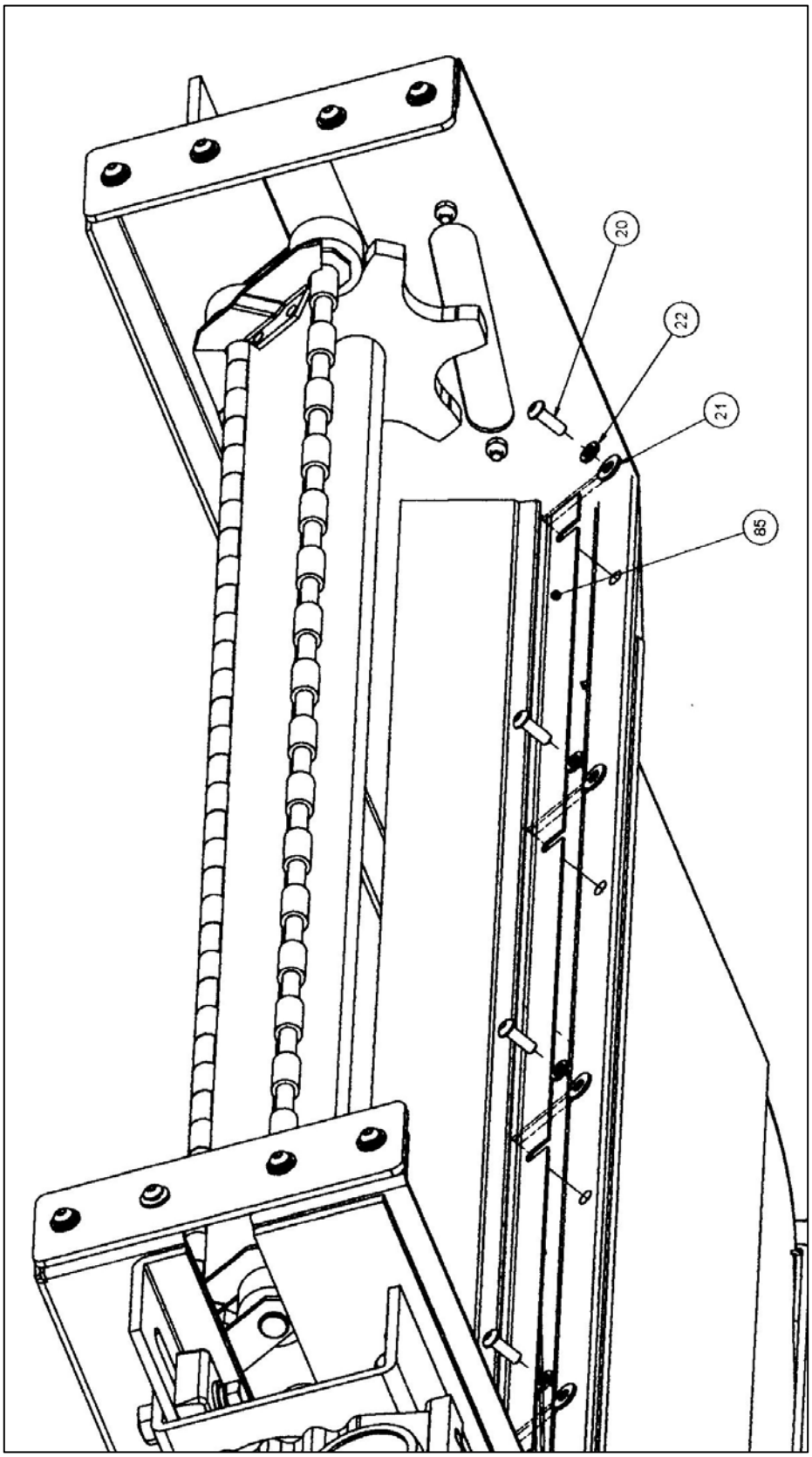
SUPER HEAVY DUTY BELT COMPONENTS



ITEM NO.	CATALOG NO.	PART NAME
1	75B-80	Roller Assembly
2	*75B-7	Hinge Plate Weldment
	*75B-71	Side Wing – Right Hand
	*75B-72	Side Wing – Left Hand
3	**75B-15	Split Bushing
4	**75B-14	Roller
		* Part of Above 75B-7 Assembly

ITEM NO.	CATALOG NO.	PART NAME
5	**75B-13	Link Plate, D-Hole
6	75B-6	Hinge Plate Weldment w / Cleat
7	75B-12	Link Plate, O-Hole
8	75B-16	Headed Link Pin
9	75B-108	Washer
10	75B-17	Cotter Pin
		**Part of Above 75B-80 Asssembly

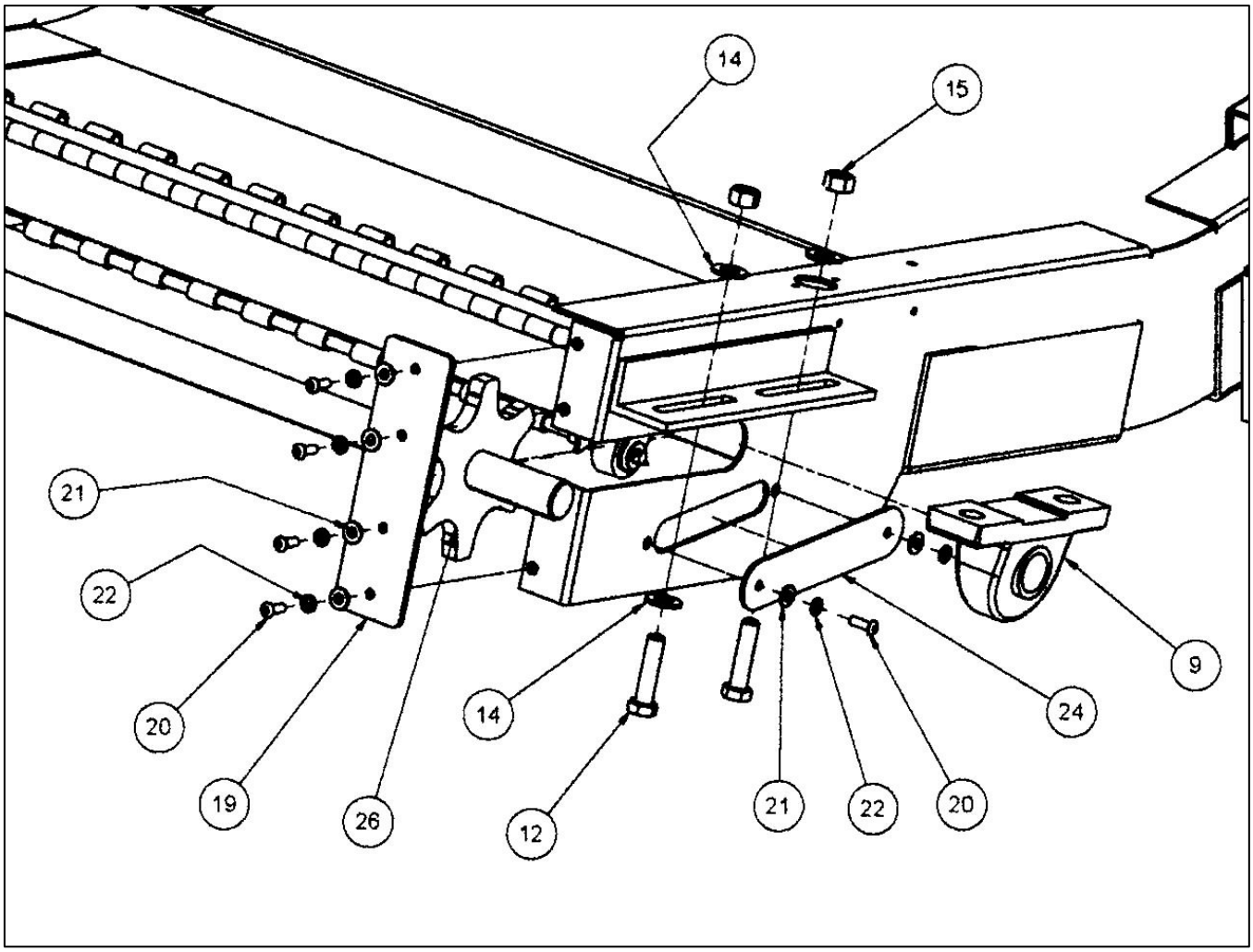
BRUSH ASSEMBLY



ITEM NO.	CATALOG NO.	PART NAME
20	97A-1	Button Head Cap Screw, M6 X 12
21	97A-2	Flat Washer, M6

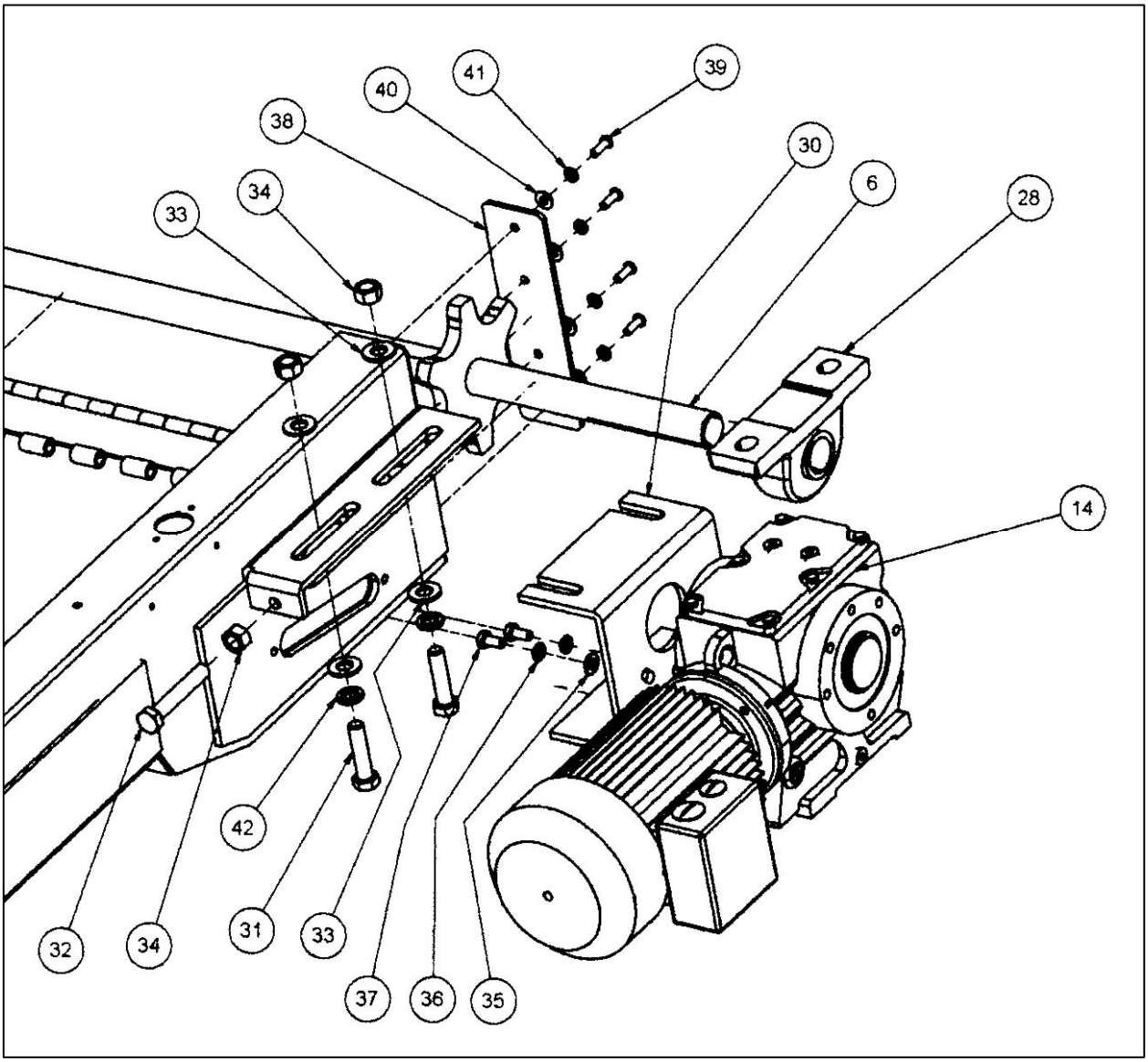
ITEM NO.	CATALOG NO.	PART NAME
22	97A-3	Lock Washer, M6
85	85A-14	Brush

DRIVE COMPONENTS (LEFT-HAND SIDE)



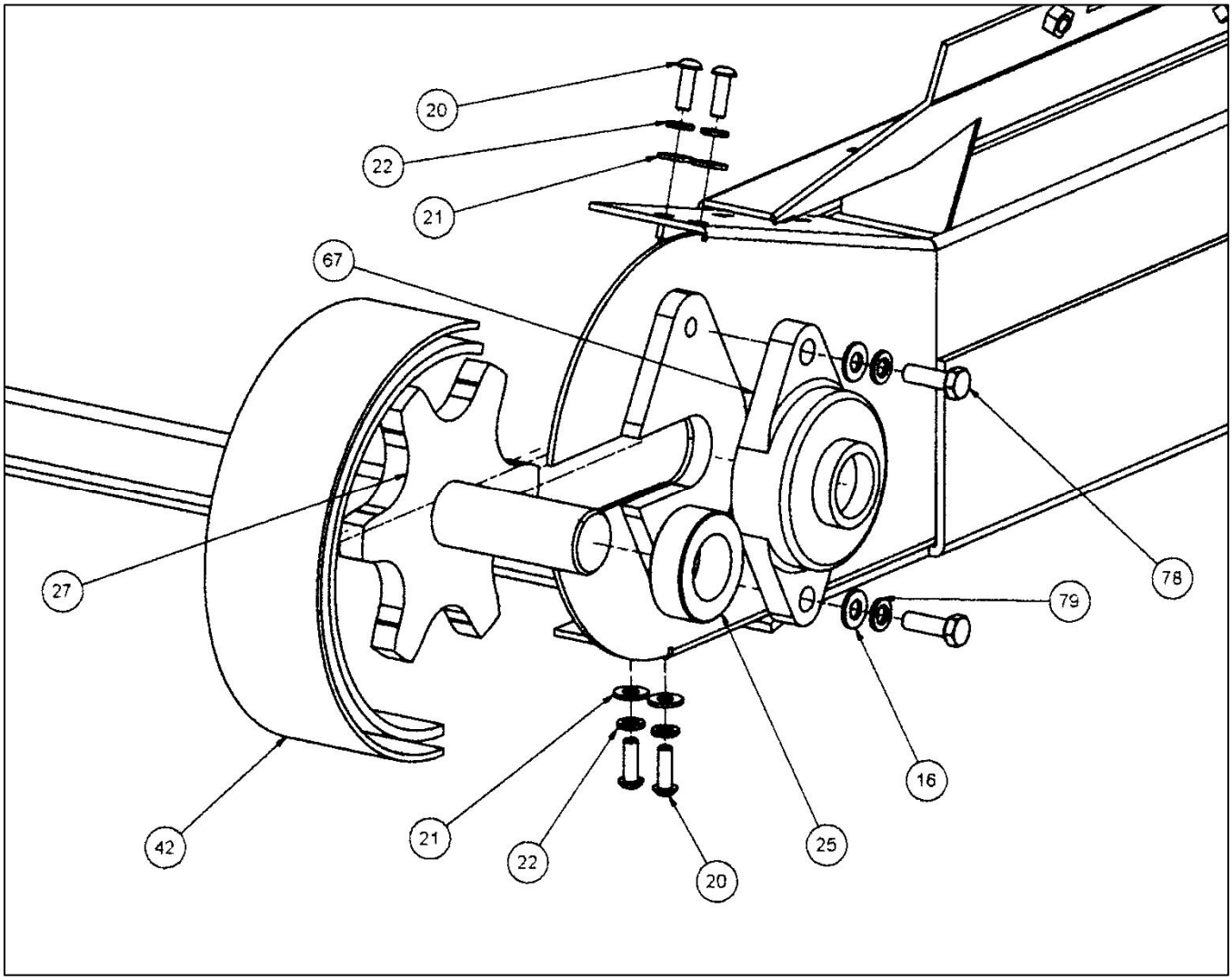
ITEM NO.	CATALOG NO.	PART NAME		ITEM NO.	CATALOG NO.	PART NAME
9	97A-4	Bearing, Pillow Block w/Lock		20	97A-1	Screw, Button-Hd. Cap M6 X 12
12	75B-55	Bolt, Hex-Hd. M12 X 30		21	97A-2	Washer, Flat M6
14	75B-60	Washer, Flat M12		22	97A-3	Washer, Lock M6
15	75B-61	Washer, Lock M12		24	97A-6	Slot Cover
19	97A-5	Plate, Discharge Support		26	97A-7	Drive Shaft Weldment

DRIVE COMPONENTS (RIGHT-HAND SIDE)



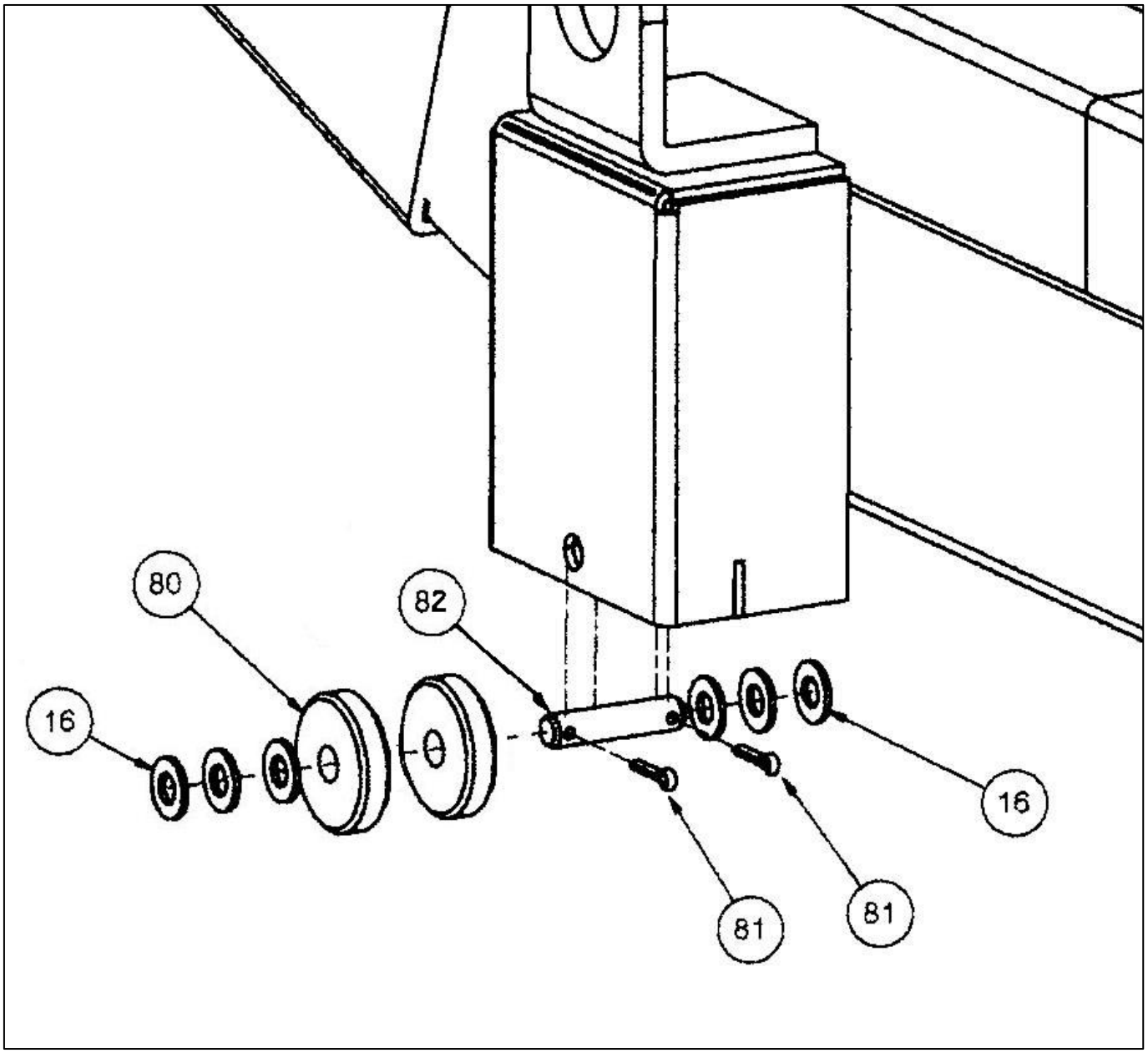
ITEM NO.	CATALOG NO.	PART NAME		ITEM NO.	CATALOG NO.	PART NAME
6	97A-7	Drive Shaft Weldment		35	97A-9	Bolt, Hex-Hd.
14	66M9	Gearmotor		36	97A-10	Washer, Lock
28	75B-56	Bearing, Pillow Block		37	97A-11	Washer, Flat
30	97A-8	Mounting Bracket, Gearbox		38	97A-5	Plate, Discharge Support
31	75B-55	Bolt, Hex-Hd. Cap M12 X 60		39	97A-1	Screw, Button-Hd. Cap M6 X 12
32	75B-31	Bolt, Hex-Hd. M12 X 120		40	97A-2	Washer, Flat M6
33	75B-60	Washer, Flat M12		41	97A-3	Washer, Lock M6
34	75B-30	Nut, Hex M12		42	75B-61	Washer, Lock M12

TAIL ASSEMBLY



ITEM NO.	CATALOG NO.	PART NAME		ITEM NO.	CATALOG NO.	PART NAME
16	75B-60	Washer, Flat M12		27	97A-13	Tail Shaft Weldment
20	97A-1	Screw, Button-Hd. M6 X 10		42	97A-14	Bolt-On Tail Flange (L.H. Shown)
21	97A-2	Washer, Flat M6		67	66M4	Bearing, Flanged w/Locking Collar
22	97A-3	Washer, Lock M6		78	66M34	Bolt, Hex-Hd. Cap M12 X 45
25	97A-12	Collar		79	75B-61	Washer, Lock M12

FRAME ROLLER ASSEMBLY



ITEM NO.	CATALOG NO.	PART NAME		ITEM NO.	CATALOG NO.	PART NAME
16	75B-108	Washer, 3/8”		81	75B-17	Cotter Pin
80	75B-14	Roller		82	97A-15	Roller Shaft

ELECTRICAL INFORMATION

LNS Chip Conveyors are supplied with a variety of drive packages and electrical controls, depending on conveyor application and customer preference. Always refer to the electrical schematics sent with the machine tool and conveyor before starting any electrical maintenance or troubleshooting.

WARNING!

ONLY QUALIFIED ELECTRICIAN OR SERVICEMAN SHOULD PERFORM ANY ELECTRICAL TROUBLESHOOTING OR MAINTENANCE TO THIS EQUIPMENT.

DO NOT PERFORM ANY MAINTENANCE, REPAIRS OR ADJUSTMENTS ON THIS EQUIPMENT WITHOUT FIRST LOCKING OUT ALL ELECTRICAL CONTROLS.

PERSONNEL SHOULD BE TRAINED IN OSHA COMPLIANT LOCK-OUT/TAG-OUT AND ELECTRICAL SAFETY PROCEDURES.

MAKE CERTAIN THAT THE POWER SUPPLY IS DISCONNECTED BEFORE ATTEMPTING TO SERVICE OR REMOVE ANY COMPONENTS!

AT NO TIMES SHOULD CIRCUIT CONTINUITY BE CHECKED BY SHORTING TERMINALS WITH A SCREWDRIVER OR OTHER METAL DEVICE.

NEVER SHOULD ADJUSTMENTS, MAINTENANCE OR CLEANING BE PREFORMED WITHOUT FOLLOWING PROPER SAFETY PROCEDURES IN ACCORDANCE WITH LOCAL, STATE AND NATIONAL SAFETY CODES.

Before making any electrical connections be certain the voltage for which the conveyor drive and control are wired is the same as incoming voltage being delivered by the electric power supply. Failure to do so may result in injury or damage to the equipment. It may be necessary in the cases where the motor has dual motor voltage ratings, for example 230/460V, 3 phase, for example, to change the motor wiring from one voltage to another. Normally a wiring diagram is located inside the motor terminal box, which indicates proper wiring for the incoming voltage supplied.

Some machines are equipped with internal electrical controls and a multi-pin type accessory plug for connecting the chip conveyor. LNS Chip Conveyors can be ordered with a mating plug, so that connecting the conveyor is as simple as plugging it in.

The best and most common source of power for the chip conveyor is the machine electrical cabinet. It is the customer's responsibilities at the time of order to determine what, if any, electrical components are present and/or order the appropriate conveyor control.

Even if the machine has no plug or other provision for connecting a chip conveyor, the conveyor can be ordered from LNS with both halves of a quick-disconnect style plug. One half will come pre-wired to the conveyor control cable. The other half of the plug will be wired to the machine electrical cabinet where it will be connected to the power supply. The chip conveyor can then be quickly unplugged for cleaning or service without having to disconnect "hard wired" connections.

Before starting the chip conveyor, check to be sure no tools, packing, or other material have been left on the belt or in the discharge opening. Start the conveyor and verify proper direction of belt travel. Reverse polarity if the belt is moving in the wrong direction

TIME DELAY DEVICES

The use of a time delay device is not suggested for use on any chip conveyor. If the chip conveyor is not running when the machine tool is cutting chips it may cause a large chip build up in the conveyor frame. When the conveyor is finally turned on it may not be able to handle the chip load. This condition may cause belt and/or frame damage to the chip conveyor. LNS will not be responsible for damage caused to chip conveyors when a time delay device is being used.

AC SUPPLY CIRCUIT AMP LOAD FOR CONVEYORS

The full load amp draw of the AC drive is based on the horsepower of the AC motor, as well as the input AC voltage.

The conveyor motor control circuit is not separately fused. The customer must provide a circuit breaker or a fused disconnect switch on the power supply to the conveyor

It may be necessary to change a circuit protection device on the incoming power supply line to accommodate the higher full load amp draw. Refer to the following tables to determine the full load amp draw on the AC supply circuit:

DANGER!

IMPROPER ELECTRICAL INTERFACE BETWEEN THE MACHINE TOOL AND CONVEYOR MAY CAUSE INJURY TO PERSONNEL, CONVEYOR DAMAGE OR MOTOR FAILURE. THE ELECTRICAL INTERFACE MUST BE INSTALLED IN ACCORDANCE WITH LOCAL, STATE AND NATIONAL SAFETY CODES. ONLY A QUALIFIED ELECTRICIAN OR SERVICE PERSON SHOULD PERFORM ANY ELECTRICAL TROUBLESHOOTING OR MAINENANCE.

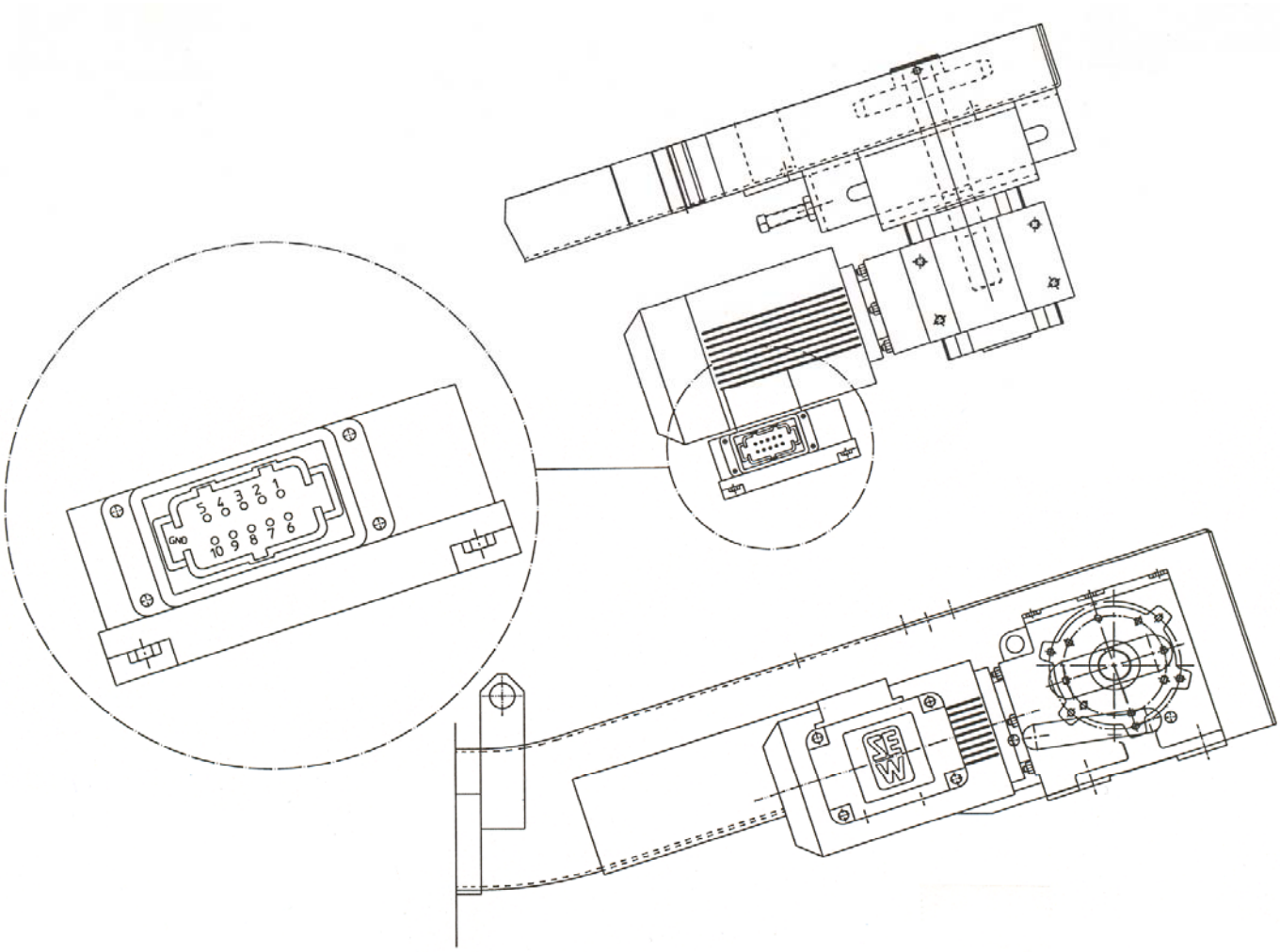
THE CONVEYOR IS NOT SEPARTELY FUSED. THE USER MUST PROVIDE EITHER A CIRCUIT BREAKER OR A FUSED DISCONNECT SWITCH ON THE INPUT AC LINE IN ACCORDANCE WITH ALL APPLICABLE ELECTRICAL CODES. SEE THE MACHINE TOOL MANUFACTURE'S ELECTRICAL SCHEMATICS FOR CIRCUIT DIAGRAM FOR PROPER ELECTRICAL INTERFACE BETWEEN THE CONVEYOR AND MACHINE TOOL.

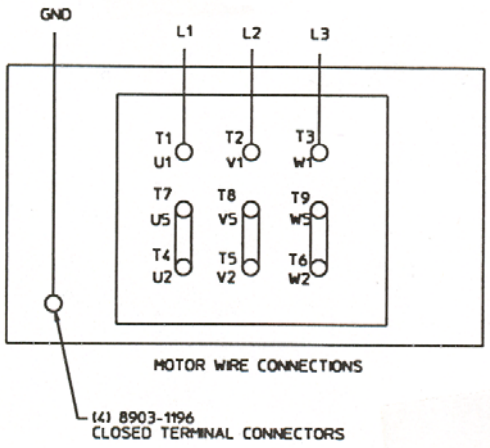
AC CURRENT REQUIREMENTS

All Trumpf Conveyors are wired for 460 Volts before being shipped from the factory.

Voltage 3PH Line-Line	Belt Drive Type	Belt Drive Horsepower	Current per phase at Rated Load	Recommended Overload Relay Setting
460 VAC	Fixed Speed	½	1.25 Amps.	1.12A

CONVEYOR ELECTRICAL MOTOR AND BULKHEAD CONNECTOR WIRING INFORMATION





PIN CONNECTIONS		
PIN NUMBER	WIRE NUMBER	WIRE GAUGE/COLOR
1	L1	14 GAUGE BLACK
2	L2	14 GAUGE BLACK
3	L3	14 GAUGE BLACK
4	NOT USED	NOT USED
5		
6		
7		
8		
9		
10		
GND	GND	14 GAUGE GREEN